Staff Report
12 Hedley Farms Road
#IWW, WPL 10956-20
Prepared March 10, 2020 last revised March 30, 2020
Hearing Date: April 15, 2020

Application Request:

Applicant is requesting to construct a pervious stone patio with barbeque, stone seating wall & free standing stonewall, free standing stonewall next to pond; stone chess set on-grade patio; ~~stepping stone walkway through pond~~*, expanded driveway and parking and stormwater drainage system. Portions of the work are within the upland review area and the WPLO area of an unnamed tributary to Sasco Brook.
*The applicant **withdrew the stepping stone walkway portion** of the application on March 11, 2019.

Plans Reviewed:

1. "As-Built Plan prepared for Christine Gould & Alexander Christon, 12 Hedley Farms Road, Westport, CT", Scale 1" = 30', dated September 5 2018 and last revised to January 23, 2020, prepared by Leonard Surveyors, LLC.
2. "Site Plan Details & Notes Christine Gould & Alexander Christon, 12 Hedley Farms Road, Westport, CT", Scale As Noted, dated December 10, 2019 and last revised to February 10, 2020. prepared by Chappa Site Consulting, LLC.
3. **"**Drainage Computations for the Proposed Drive Expansion, Barbeque & Patio Improvements at 12 Hedley Farms Road, Westport, CT", dated February 10, 2020, prepared by Chappa Site Consulting, LLC.

Background Information:

1. **Application #AA 473-81** In 1981 an exemption from the Inland Wetlands and Watercourses regulation was issued for the construction of a new single family residence due to the fact that the lot was part of a subdivision approved prior to the adoption of the IWW regulations. The proposed site plan showed a residence located 32' from the edge of the pond.

2. **Application #WPL 633-82** Submission of a larger footprint than the original proposal for a single family residence and driveway to connect to Hedley Farms Road. Condition #5 of the resolution states the area between the waterway protection line and the pond shall be a no-mow, naturally landscaped area of native plantings and ground covers in conformance with consultants' (Dr. Philip Barske of Applied Ecology and Natural Resource Management) recommendations.

3. **Application #WPL 794-83** For the dredging of the pond to remove 3000-3200 cubic yards of silt. Noted in the staff report submitted with this application is the following statement: "The subject property was given Waterway Protection Line approval for house construction in November 1982. However, once site activity began, conditions of the permit were violated and extensive, unauthorized clearing occurred on the property. Applicant's environmental representative compiled a vegetation plan, as required by the Conservation Department. An extensive revegetative landscape plan was also prepared by Dr. Barske as an integral part of the pond dredging application.

4. **Application #IWW/M 8039-07** Amendment of wetland boundary map I-6

5. **Application #IWW WPLE 8368-08** For a proposed detached two-car garage and generator pad. The garage was proposed within the 30' wetland setback and 20' wetland setback. The Garage was never built.
6. **Application AA WPL/E 10708-18** For two shed dormers on the existing roof, a new exterior balcony, patio, and interior renovations. No Certificate of Compliance issued.
7. **Application AA WPL/E 10915-19** For plantings throughout the property. No Certificate of Compliance issued.

Facts Relative to this application:

1. Portions of the proposed driveway and patio are within the 30' review area from wetlands. A landscape wall and chess patio area are located within the 20' review area from wetland and within the Waterway Protection Line boundary.
2. Lot Area: **87,769 sq. ft.** (2.0149 Acres)
3. Lot Coverage onsite increases **from 8,520 sq. ft. (16.0%) to 9305 sq. ft. (17.6%)**.
4. Most of the property lies within the Flood Zone AE (el. 13') from FEMA map 09001556G, Dated July 8, 2013.
5. The property is not located within the Aquifer/wellfield Protection Overlay zone or groundwater recharge area.
6. The WPLO boundary is located 15' from the wetland boundary.
7. The property is not located within a Coastal Area Management Zone.
8. The proposed total coverage is 17.6%.
9. The wetland area encompasses 49.4% of the lot area.
10. The Town of Westport Wetlands Inventory prepared by Flaherty, Giavara Associates describes this wetland system as a streamside floodplain with a shrub and wooded swamp.
11. The original septic system failed in 2005 and a new system was installed south of the existing residence.
12. Soil report Summary- prepared by Henry Moeller dated April 12, 2007 describes the following wetland soil occurring on the property:

    Saco silt loam (Sa): This soil is a very poorly drained alluvial soil developed primarily on floodplains and depressions subject to sedimentation. The surface soil ranges from 20 to 40 inches or more in thickness and consists of very dark gray to black silt loam and very fine sandy loam. The surface may also have inclusions of muck on top less than 12 inches thick. The underlying subsoil and substratum also consist of silt loam, but may have inclusions of fine sandy loam to loamy sand, especially below 36 inches. The groundwater table is at or near the surface from ate fall through early spring. This soil is frequently flooded or ponded. The Saco series is classified as coarse-silty, mixed, nonacid, mesic Fluvaquentic Humaquepts.

    Aquents (AQ): These mapping units consist of disturbed soils in which no natural soil profile or solum can be recognized. The drainage classification ranges from poorly drained to very poorly drained based on vegetation, topography, presence of a recently developed thin organic surface, location on the landscape,

and other factors. There may be inclusions of piles of soil material that may not be poorly drained but is too small in area. In other areas the soils were graded, filled or completely removed down to the undeveloped substratum material. In filled areas there may be a perched water table or an impervious layer that creates an aquic moisture regime. The textures of the soil material include silt loam, fine sandy loam, sandy loam, silt, sand, and gravelly sandy loam.

Conformance to Section 6 of the Inland Wetlands and Watercourses Regulations
6.1 GENERAL STANDARDS

a) disturbance and pollution are minimized;
b) minimize height, width, length of structures are limited to the minimum; dimension to accomplish the intended function;
c) loss of fish, other beneficial organisms, wildlife and vegetation are prevented;
d) potable fresh water supplies are protected from dangers of drought, overdraft, pollution, misuse and mismanagement;
e) maintain conservation, economic, recreational and aesthetic qualities;
f) consider historical sites

Discussion:

Land disturbance for this site development proposal is within 20 feet of the wetlands onsite and within the WPL, including portions of the drive, chess patio, and retaining wall. Additionally, approximately 10 cu. yds. Of fill will be needed in the area of the wall.
As stated above, permit (Application # AA-WPL/E-10915-19) was for the planting of a buffer for most of the pond's southern edge and establishing a meadow. Most of these plantings were installed as of October 30, 2019. Portions of this current proposed project is shown within the 20' review area from the wetlands. These established vegetated buffer strips have traditionally been used to separate human activity within an upland from a wetland or water resource or any other valuable and/or sensitive environment. Vegetation growing along pond edges help to bind the soil, giving the banks stability. Vegetation slows the movement of floodwater through wetland areas, reducing erosive flow velocities on floodplain. Staff would support keeping all existing vegetation/plantings and request the applicant find further enhancements for the pond. Staff feels that if any of the plantings from the previous permit are disturbed by the construction activities, then they shall be replaced/restored. The applicant could consider re-vegetating the area around the wall and chess area with enhanced beds of plantings instead of the manicured lawn.

6.2 WATER QUALITY
a) flushing rates, freshwater sources, existing basin characteristics and channel contours will not be adversely altered;
b) water stagnation will neither be contributed nor caused;
c) water pollution will not affect fauna, flora, physical or chemical nature of a regulated area, or the propagation and habitats of fish and wildlife, will not result;

d) pollution of groundwater or a significant aquifer will not result (*groundwater recharge area or Aquifer Protection Overlay Zone*);
e) all applicable state and local health codes shall be met;
f) water quality will be maintained or improved in accordance with the standards set by federal, state, and local authority including section 25-54(e) of the Connecticut General Statutes
g) prevents pollution of surface water

Discussion:
Stormwater runoff from driveways can be point sources of pollution, and runoff from lawn and patios can be non-point sources. This is based on knowledge of typical uses for driveway or road, and lawn and landscape runoff containing typical fertilizers, and pesticides, as well as sediments, hydrocarbons, and heavy metals.

Approximately 1,700 sf of the runoff from the existing and proposed driveway area will be directed to the underground precast stormwater galleries. This is done to offset the runoff volume from the proposed drive areas, walkways and patio. Additionally the patio and walk areas are proposed as pervious designs. This design consist of an aggregate reservoir and sand joints between the pavers to allow water infiltration.
In cases of impervious designs, rainwater cannot infiltrate the ground through these impervious surfaces and becomes runoff; consequently, more water reaches surface water resources faster than as infiltration would occur under natural conditions.

Staff recommends that test holes be required and witnessed by the Engineering Department to assure the bottom of the infiltrators will be sufficiently above the groundwater to provide water quality. This is echoed in one of the conditions of the Flood & Erosion Control Board's March 4, 2020 approval. The Engineering Department has reviewed the plans and noted it complies with the requirements.

6.3 EROSION AND SEDIMENT
a) temporary erosion control measures shall be utilized during construction and for the stabilization period following construction;
b) permanent erosion control measures shall be utilized using nonstructural alternatives whenever possible and structural alternatives when avoidable;
c) existing circulation patterns, water velocity, or exposure to storm and flood conditions shall not be adversely altered;
d) formation of deposits harmful to aquatic life and or wetlands habitat will not occur;
e) applicable state, federal and local guidelines shall be met.

Discussion:

As identified in the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, land use changes and land development activities affect the natural or geologic process by:
a) removing the existing protective vegetative cover,
b) prolonging the exposure of unprotected disturbed areas,

c) exposing underlying soil or geologic formations less pervious and/or more erodible than the original soil surface,
d) compacting soils with heavy equipment and increasing impervious surfaces, thereby reducing rainfall absorption and increasing runoff,
e) modifying drainage areas,
f) altering the topography in a manner that results in shortened times of concentration of runoff
g) altering the groundwater regime

The Site Plan identifies silt fence downslope from the areas of proposed work. The silt fence, if properly installed, should provide sufficient protection against any sediments entering the pond. An anti-mud tracking pad is proposed along Hedley Farms Road, required to access the patio and wall areas. This will provide sufficient protection from sediment entering the road, providing it is well maintained.

6.4 NATURAL HABITAT STANDARDS

a) critical habitats areas,
b) the existing biological productivity of any Wetland and Watercourse shall be maintained or improved;
c) breeding, nesting and or feeding habitats of wildlife will not be significantly altered;
d) movements and lifestyles of fish and wildlife (plant and aquatic life)will not be significantly affected;
e) periods of seasonal fish runs and bird migrations shall not be impeded;
f) conservation or open space easements will be deeded whenever appropriate to protect these natural habitats.

Discussion:

Vegetation is the main source of organic detritus, and is thus the basis of the food chain. This vegetative zone also helps shade the water and provide cover for both fish and terrestrial animals. In many instances, the wetland areas and associated buffers provide habitat that serves the needs of many species. Buffers can offer protected sites for nests or dens, food sources, and a corridor for safe travel. Such corridors also provide important links between larger habitat areas. Staff recommends an enhanced buffer (as stated in Discussion of 6.1) to maintain and improve habitat opportunities around the pond.

6.5 DISCHARGE AND RUNOFF

a) the potential for flood damage on adjacent or adjoining properties will not be increased;
b) the velocity or volume of flood waters both into and out of Wetlands and Watercourses will not be adversely altered;
c) the capacity of any wetland or watercourse to transmit or absorb flood waters will not be significantly reduced;
d) flooding upstream or downstream of the location site will not be significantly increased;

e) the activity is acceptable to the Flood & Erosion Control Board and or the Town Engineer of the municipality of Westport

Discussion:

Thirty-two feet of stormwater galleries are proposed for collecting storm water runoff within the driveway. . The Engineering Department has reviewed the plans and note it complies with Town requirements. As noted above, a vegetated buffer was installed onsite under a previous permit. The vegetation provides a buffer to the pond as well as providing biofiltration actions to treat stormwater runoff to remove soluble nutrients, slow runoff velocity and to provide an opportunity for infiltration. Staff recommends the applicant consider an enhanced buffer in addition to the existing vegetation to allow for infiltration of the stormwater runoff.

6.6 RECREATIONAL AND PUBLIC USES

a) access to and use of public recreational and open space facilities, both existing and planned, will not be prevented;
b) navigable channels and or small craft navigation will not be obstructed;
c) open space, recreational or other easements will be deeded whenever appropriate to protect these existing or potential recreational or public uses;
d) wetlands and watercourses held in public trust will not be adversely affected.

Discussion:
The proposed activities will not significantly impact recreational and public uses.

Waterway Protection Line Ordinance
Section 148-9 of the Waterway Protection Line Ordinance states that the applicant shall submit information to the Conservation Commission showing that such activity will not cause water pollution, erosion and/or environmentally related hazards to life and property and will not have an adverse impact on the preservation of the natural resources and ecosystem of the waterway, including but not limited to impact on ground and surface water, aquifers, plant and aquatic life, nutrient exchange and supply, thermal energy flow, natural pollution filtration and decomposition, habitat diversity, viability and productivity and the natural rates and processes of erosion and sedimentation.

The Waterway Protection Line Boundary occurs 15’ from the wetland boundary or 15’ from the 25 year flood plain whichever is more conservative. On this property the boundary is established 15’ from the wetland boundary. Standards of Review 6.1 through 6.5 address the issues stated above.

The Flood & Erosion Control Board approved the application at the March 4, 2020 hearing.

Alternatives for reduction of impacts:

1. No build alternative.
2. **Approve Application** with the following modifications to plans listed above:

a) Provide a planting plan prior to issuance of a Zoning Permit, for the area around the wall and chess patio area which substitutes plantings instead of manicured lawn.

b) All planting within 20' from the wetland area shall be done by hand. Mulching within this area shall be done with organic leaf mulch. Plantings must be installed prior to the issuance of a CCC. The Commission may also want to consider posting of a bond.

c) The site engineer shall oversee the drainage installation and certify that it is installed correctly prior to the issuance of a CCC. Test Pits must be done to ensure that the infiltrators are sufficiently designed to be above the groundwater to provide water quality and proper functioning.

d) Install erosion control prior to construction commencement just outside the limit of disturbance as shown on the site plan.

e) Conservation Department to be contacted 48 hours prior to construction commencement.